



## Diplôme d'ingénieur de l'ECPM

## Diplôme d'ingénieur de l'ECPM (trilingue) (Contrat pro)

### Contact

Sylvie Begin : [sylvie.begin@ipcms.unistra.fr](mailto:sylvie.begin@ipcms.unistra.fr)

|                                 |              |         |         |
|---------------------------------|--------------|---------|---------|
| Langue du parcours              | FR / DE / EN |         |         |
| ECTS                            | 180 ECTS     |         |         |
| Volume horaire                  |              |         |         |
| TP : 0h                         | TD : 0h      | CI : 0h | CM : 0h |
| Formation initiale              | Non          |         |         |
| Formation continue              | Non          |         |         |
| Apprentissage                   | Non          |         |         |
| Contrat de professionnalisation | Oui          |         |         |

## 3ème année Diplôme d'ingénieur de l'ECPM (trilingue) (Contrat pro)

### Semestre 9

|   | ECTS           | CM      | CI | TD | TP | TE | Stage         |
|---|----------------|---------|----|----|----|----|---------------|
| <b>Liste UE Obligatoires</b>  |                |         |    |    |    |    |               |
| <b>Langues</b>  | <b>4 ECTS</b>  |         |    |    |    |    |               |
| Anglais   |                |         |    |    |    |    |               |
| LV2 au choix Allemand   |                |         |    |    |    |    |               |
| LV2 au choix Espagnol   |                |         |    |    |    |    |               |
| LV2 au choix Français langue étrangère  |                |         |    |    |    |    |               |
| <b>Sciences humaines, sociales et économiques</b>   | <b>4 ECTS</b>  |         |    |    |    |    |               |
| Entrepreneuriat   |                | 10.5 h  |    |    |    |    |               |
| Propriété intellectuelle et brevets   |                |         |    |    |    |    |               |
| Intégration en entreprise   |                |         |    |    |    |    |               |
| Sécurité des installations industrielles  |                |         |    |    |    |    |               |
| Bioéconomie   |                |         |    |    |    |    |               |
| Projets tutorés   |                |         |    |    |    |    |               |
| <b>Stage ingénieur</b>  | <b>10 ECTS</b> |         |    |    |    |    | <b>17 sem</b> |
| <b>Sciences option 1</b>  |                |         |    |    |    |    |               |
| <b>Sciences analytiques</b>   | <b>12 ECTS</b> |         |    |    |    |    |               |
| Process intensification   |                |         |    |    |    |    |               |
| Industrial water cycle  |                |         |    |    |    |    |               |
| Advanced mass spectrometry  |                | 18.66 h |    |    |    |    |               |
| Advanced recognition and applications   |                | 17.5 h  |    |    |    |    |               |
| Advanced spectroscopic methods  |                | 21 h    |    |    |    |    |               |
| Characterization methods for solid surfaces and nanomaterials                                       |                | 21 h    |    |    |    |    |               |
| Analytical sciences & Environment   |                |         |    |    |    |    |               |
| Water and soil chemistry  |                | 12.5 h  |    |    |    |    |               |
| Air chemistry   |                | 10.3 h  |    |    |    |    |               |
| Bibliographic and tutored project   |                | 8.1 h   |    |    |    |    |               |
| <b>Sciences option 2</b>  |                |         |    |    |    |    |               |
| <b>Chimie moléculaire</b>   | <b>12 ECTS</b> |         |    |    |    |    |               |
| Process intensification   |                |         |    |    |    |    |               |
| Industrial water cycle  |                |         |    |    |    |    |               |
| Synthetic strategies and retrosynthetic analysis  |                | 30.33 h |    |    |    |    |               |
| Natural product biosynthesis  |                | 10.5 h  |    |    |    |    |               |
| Radical chemistry and photochemistry  |                | 10.5 h  |    |    |    |    |               |
| Glycochemistry  |                | 10.5 h  |    |    |    |    |               |
| Heterocyclic Chemistry  |                | 10.5 h  |    |    |    |    |               |
| Introduction to medicinal chemistry   |                | 10.5 h  |    |    |    |    |               |
| Chemistry of Fluorine   |                | 10.5 h  |    |    |    |    |               |
| Industrial synthesis of bioactive compounds   |                | 10.5 h  |    |    |    |    |               |
| Projet tutoré CM  |                |         |    |    |    |    |               |
| <b>Sciences option 3</b>  |                |         |    |    |    |    |               |
| <b>Matériaux de fonction et nanosciences</b>  | <b>12 ECTS</b> |         |    |    |    |    |               |
| Materials for high density and low power data storage   |                |         |    |    |    |    |               |
| Materials and technologies for conventional electronics   |                | 16.2 h  |    |    |    |    |               |
| Eco-design of materials   |                |         |    |    |    |    |               |
| Actions of air, water and soil remediation  |                |         |    |    |    |    |               |
| Materials for electrochemical energy storage and conversion   |                |         |    |    |    |    |               |
| Nanoparticules for health : imaging and therapy   |                | 21 h    |    |    |    |    |               |
| Project MN  |                |         |    |    |    |    |               |
| <b>Sciences option 4</b>  |                |         |    |    |    |    |               |
| <b>Ingénierie des polymères</b>   | <b>12 ECTS</b> |         |    |    |    |    |               |
| Polymer formulation   |                | 10.5 h  |    |    |    |    |               |
| Macromolecular design and engineering   |                | 15.1 h  |    |    |    |    |               |
| Composites: materials, structures and processes   |                | 15.1 h  |    |    |    |    |               |
| Polymers in solutions and dispersed media: microencapsulation, coatings and biomedical applications |                | 23.2 h  |    |    |    |    |               |
| Polymer reaction engineering  |                | 15.1 h  |    |    |    |    |               |
| Polymer processing  |                | 14 h    |    |    |    |    |               |
| Ecodesign of polymer materials  |                | 10.3 h  |    |    |    |    |               |
| Recycling and circular economy  |                | 10.3 h  |    |    |    |    |               |
| Monographs  |                |         |    |    |    |    |               |

### Semestre 10

|  | ECTS          | CM | CI | TD | TP | TE | Stage |
|--|---------------|----|----|----|----|----|-------|
| <b>Sciences humaines sociales et économiques</b> | <b>1 ECTS</b> |    |    |    |    |    |       |
| Projets tutorés                                  |               |    |    |    |    |    |       |

|                                  | <b>ECTS</b> | <b>CM</b> | <b>CI</b> | <b>TD</b> | <b>TP</b> | <b>TE</b> | <b>Stage</b> |
|----------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|--------------|
| Sciences appliquées              | 5 ECTS      |           |           |           |           |           |              |
| Chimie et développement durables |             |           |           |           |           |           |              |
| Biopolymères et biomatériaux     |             |           |           |           |           |           |              |
| Analyse de données               |             |           |           |           |           |           |              |
| Optimisation énergétique         |             |           |           |           |           |           |              |
| Biotechnologies                  |             |           |           |           |           |           |              |
| Catalyse et environnement        |             |           |           |           |           |           |              |
| Période en entreprise            | 24 ECTS     |           |           |           |           |           |              |